

# AQUACULTURE AND HYDROPOONICS: 1968-1978

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BIBLIOGRAPHIES AND  
LITERATURE OF AGRICULTURE,  
BLA-2, MAY 1979

UNITED STATES  
DEPARTMENT OF  
AGRICULTURE

SCIENCE AND  
EDUCATION  
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Aquaculture and Hydroponics: 1968-1978

Compiled by  
Charles N. Bebee  
Automated Retrieval Section  
National Agricultural Library

Bibliographies and Literature  
of Agriculture, BLA-2, May 1979

U.S. Department of Agriculture  
Science and Education Administration  
Technical Information Systems  
Beltsville, Maryland 20705

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## PREFACE

Citations for this bibliography were pulled from the AGRICOLA citation database online. They represent:

- Articles, monographs, and series, regardless of language, indexed at the National Agricultural Library since the publication of the January 1970 issues of the Bibliography of Agriculture and the National Agricultural Library Catalog.
- Literature received more than one year after publication is generally not indexed; exceptions are made for important scientific publications.

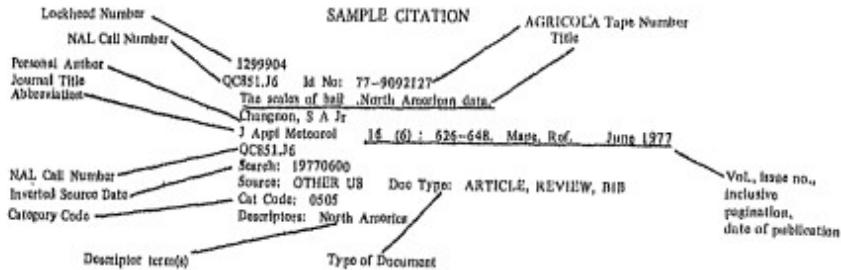
Some duplication of citations occurs because the system requires separate entries for each of the separate files which are incorporated into AGRICOLA. The compiler has attempted purging of known duplicate entries.

The bibliography is a broad subject arrangement by categories as used in The Bibliography of Agriculture; subarrangement is alphabetical by author. A personal author index is included.

User comments and suggestions are welcomed and should be forwarded to the compiler, Charles N. Bebee.

Citations listed on pages 58 - 65 are items from old category codes 1970-1971. These cannot be sorted online and are, therefore, arranged in single alphabetical order.

Richard A. Farley  
Deputy Director  
Technical Information Systems  
Science and Education Administration  
U.S. Department of Agriculture



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## SEARCH STRATEGY

Set	Items	Description
1	90 AGRICULTURE	
2	139 WATER (F) CULTURE	
3	515 WATER (F) CULTURES	
4	263 HYDROOPEN?	
5	542 1=4/4	
6	256 5/BAJ	
7	7 AQUICULTUR?	
8	67 SOILLESS	
9	324 5+7/10	
10	279 9./BAJ	
11	353 1+4	
12	95 1U-1	
13	46 WATER (W) CULTURE	
14	9 WATER (W) CULTURES	
15	8 HYDROCULTUR?	
16	467 1+4/7+4/1+13+14+15	
17	233 16/BAJ	
18	234 16/1MIN	
19	2 SOIL(1W) LESS	
20	468 18+19	
21	22498 CC-15?	
22	132756 CC-16/20	
23	20144 CC-65/505	
24	3443 OC-7/5	
25	5497 OC-3/30	
26	67250 1-25/f+	
27	50 10-25	
28	418 20-27	
29	197 28/BAJ	
30	0 BEBEJ/MORAN	

Print 20/2/1-168  
 Search Time: 0.389    Prints: 468    Descs.: 29

## AGRICULTURAL ECONOMICS AND RURAL SOCIOLOGY

## GENERAL AGRICULTURE

1305666 Id No: 78-9007952  
SH1.F54 Id No: 78-9007952  
The integration of aquaculture with agriculture

Buck, D H  
Fisheries 2 (5): 11-12, 14-16.  
Savanchi: 1977:200  
Source: OTHER US  
Cat Code: C505  
Doc Type: ARTICLE  
Cat Code: C505

691847  
80 R3212 Id No: 73-9149678  
L'aquaculture, technique d'avenir; Hydroponics, crop culture\*  
of the Future  
Cesur, G  
Rev Mon. Suisse 45 (5): 41-42.  
Feb 1973  
Language: FRA  
Search: 1973:200  
Doc Type: ARTICLE  
Cat Code: 0505

1051876  
H01945.415 Id No: 75-9121107  
L'utilite d'observer de l'humanite? Les formes marines: Maritime  
feries, the ultimate reserve of humanity? -Aquaculture.  
Nakornkarn, J P  
Inf Agric. (Paris) 46(1): 34-36. Sept 1975  
HD145.415  
Language: FRA  
Search: 1975:90900  
Doc Type: ARTICLE  
Cat Code: 0505

780136  
369.9 5018 Id No: 73-9227559  
L'aquaculture: Source nouvelle de protéines alimentaires:  
Aquaculture: A new source of food proteins  
Rouzaud, P  
Bull Soc Sci Hyg Aliment 61 (1): 18-31. 1973  
Language: FRE  
Search: 1973:0000  
Doc Type: ARTICLE  
Cat Code: 1010; 6020

## 1315940 Id No: 77-910971

Aquaculture economics research needs: report from a workshop to identify aquaculture economics research needs. Atlanta, Georgia -- April 23, 1976  
Smith, F J; Roberts, K J  
Charleston, SC. C. Marine Res Ctr. S. C. Sea Grant Program.  
Tech Rep 5,  
77. 910971

Source: 1976:800  
Search: 1976:800  
Doc Type: MONOGRAPH  
Location: AGC  
Cat Code: 1005  
Descriptors: Research Needs: Aquaculture

1257025  
281.8 EK2 Id No: 77-9053494  
Technicka ekonomika proceva razlicitih nacinova usporjedivanja u ribnjacima. 2: Technical and economic estimate of different types of aquaculture in fish ponds. Farm management.

Apostolski, K M; Arsovski, S S  
Ekon Poljopr. 23 (5): 37-50. Eng. sum.  
261.8 EK2  
Language: SRP  
Search: 1970:500  
Doc Type: ARTICLE  
Cat Code: 1010  
Descriptors: Yugoslavia

1330057  
72.8 K52 Id No: 77-9117359  
Cost accounting in agriculture  
Irrigation economics.  
Pinkhasov, M; Polinov, S  
Kritikoobrazdovo 8: 38-40. Aug 1976  
72.8 K522  
Language: RUS  
Search: 1976:800  
Doc Type: ARTICLE  
Cat Code: 1010; 6020

1257025  
281.8 EK2 Id No: 77-9053494  
Technicka ekonomika proceva razlicitih nacinova usporjedivanja u ribnjacima. 2: Technical and economic estimate of different types of aquaculture in fish ponds. Farm management.

Apostolski, K M; Arsovski, S S  
Ekon Poljopr. 23 (5): 37-50. Eng. sum.  
261.8 EK2  
Language: SRP  
Search: 1970:500  
Doc Type: ARTICLE  
Cat Code: 1010  
Descriptors: Yugoslavia

1267631 100 ALIH Id No: 77-9910337  
Economic comparison of singled cropped and multiple cropped  
cultural production systems  
Crawford, K W  
Agricultural Experiment Station  
Kingsburg, Nova Scotia  
Highlights Agric Res 23(3): 6 - Fall 1976

100 ALIH Id No: 77-9910800  
An economic evaluation of aquaculture in Ontario

Lerner, A  
Can J Agric Econ 25(1): 74-79 Feb 1977  
Search: 1976000 Doc Type: ARTICLE Location: AGE  
Cat Code: 1015 Descriptors: Cost; And Returns: Aquaculture; Alberta

1315913 281 C16 Id No: 77-9910800  
An economic evaluation of aquaculture in Ontario  
Lerner, A  
Can J Agric Econ 25(1): 74-79 Feb 1977  
Search: 1976000 Doc Type: ARTICLE Location: AGE  
Cat Code: 1015 Descriptors: Fisheries; Hatchery; Equipment Requirements; Feeding; Costs; Marketing; Consumption

1252544 80 W41 Id No: 77-9935139  
Costs and losses of soil and solutes media  
Poule, H A  
Florists Rev 159 (4132): 62 - 87-91. Feb 10, 1977  
Search: 19770210 Doc Type: ARTICLE  
Source: OTHER US Cat Code: 1015 Descriptors: Costs; Marketing; Resource Allocation

12522 A107 Id No: 77-9910879  
Analyzing a new marine business

Smith, F J  
Oregon State University, Extension Service  
Sea Grant \$ G Oregon State Univ Mar Adv Program  
Nov 1976 SH222.A107  
Search: 19761100 Doc Type: ARTICLE Location: AGE  
Source: EAI Cat Code: 1015 Descriptors: Marine Industry; Business Management; Costs And Returns; Accounting; Resource Allocation

1222949 595.A1P7 Id No: 77-9920843  
Can we afford aquaculture? - Industries -  
Conklin, O E B (3): 3-7. Summer 1976  
Prof Nutr B Prof Nutr 1976  
SFS5.APT  
Search: 1975000 Doc Type: ARTICLE  
Source: OTHER US Cat Code: 1010  
Descriptors: United States

6485978 41.8 AM3 Id No: 72-912453  
Aquaculture and mariculture: protein potentials.  
Pedersen, H G C  
Amer Vet Med Assoc J 165 (11): 1457-1475. Ref. Dec 1.  
1972  
41.8 AM3  
Search: 19721201  
Doc Type: ARTICLE  
Cat Code: 1030

885909 70172-157 Id No: 74-9001588  
Critical variables in food-item population dynamics in a wastewater aquaculture system. -Fishery products.  
Powers, J E  
Environ Print Technol Ser EPA U S Environ Prot Agency  
650-74-041: 457-503. Jun 1974  
TD172-ET  
Search: 19740600 Doc Type: ARTICLE  
Cat Code: 1030

848597 848597 SH1.A6 Id No: 74-9049127  
Comparison of the economic potential of aquaculture, land  
farming, Y C  
Shang, Y C  
Aquaculture 2 (2): 187-195. Ref. Jun 1973  
SH1.A6  
Search: 19730600 Doc Type: ARTICLE  
Cat Code: 1030  
Descriptors: Taiwan

- 1287737 Id No: 77-9031695  
519-32 Role of freshwater aquaculture in integrated rural development in India  
Tripathi, S D  
Agric Agricnd J 9 (12): 31-32.  
Search: 19761200  
Doc Type: ARTICLE  
Cat Code: 1030  
Descriptors: India
- 871440 Id No: 74-8069210  
12 AGB Fish Farming on aquaculture can meet future demand for proteinrich food  
AGRIC News Netw 6: 1-4, 1974  
12 AGB Search: 19740000  
Doc Type: ARTICLE  
Cat Code: 1030
- 1181840 Id No: 76-9111663  
SH21.15 The International Center for Aquaculture annual report for fiscal year 1975 - Fisheries for growing protein, developing countries, programs, international Experiment Station, International Center for Aquaculture Auburn 63 p. Ref. Dec 23, 1976  
Search: 19751223  
Source: EXP STN Doc Type: MONOGRAPH, BIB  
Cat Code: 1030; 2805  
Descriptors: Alabama
- 648579 Id No: 72-912454  
519-32 Aquaculture and associated diseases of fish of public health importance  
Ghittino, P  
Amer Vet Med Assoc J 161 (11): 1476-1485. Ref. Dec 1.  
41, 8  
Search: 19721201  
Doc Type: ARTICLE  
Cat Code: 1505
- 795188 Id No: 74-9004014  
22 14203 protein crisis and aquaculture  
Prasad, R N  
Indian Farming 23 (5): 5, 36-  
22 IN283  
Search: 19730000  
Doc Type: ARTICLE  
Cat Code: 1510  
Descriptors: India
- 1051793 Id No: 75-9121094  
501 L045 The aquacultural revolution of marine fish  
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Anderson, J I M  
Proc R Soc Lond, B Biol Sci 191 (1102): 159-184. Ref.  
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501 Lab6  
Search: 19751118  
Doc Type: ARTICLE  
Cat Code: 2005
- 1350151 Id No: 78-9009342  
206-01 SH22 Soft shell crabs as an aquaculture food product  
Hulen, J V  
Feedstuffs 49 (50): 28-29. Dec 5, 1977  
228-81 F322  
Search: 19771205  
Source: OTHER US Doc Type: ARTICLE, REVIEW  
Cat Code: 2005
- 1318284 Id No: 77-8107328  
381 J8223 Hydrogen growth of crops green beans, cantaloupes, cotton, in solutions saturated with -14C-benzo-a-pyrene  
-Carbon isotopes  
Blum, S C; Swarbrick, R E  
J Agric Food Chem 25 (5): 1093-1096. Sept/Oct 1977  
381 J8223  
Search: 19771000  
Source: OTHER US Doc Type: ARTICLE  
Cat Code: 1505

Alabama Agricultural Experiment Station

Auburn, 11 p. 1974 (sub. May 1976)

SH21.15 Id No: 77-9024422

The food production efficiency of undomesticated species of animals from fish, aquaculture.

Large, R.V  
In Food Production and Consumption. A. N. Duchman, J. G. Jones & E. H. Roberts, eds. p. 199-214. Ref. 1976

QH705.F64 Search: 19760000

Doc Type: ARTICLE Cat Code: 2005

564904 1d No: 72-9038192

389.8 V89 Iodine content in vegetables grown in soil end by hydromonics. E 1

Fan-Chenko, Y. I. Yoo Pilam 30 (5): 68-68. Ref. Eng. sum. Sept/Oct 1971

1255158 1d No: 77-9622931 Book Cat: 770072 3

157.8 R29 No: 260562 Id No: 77-9622931 Proceedings of the first International Conference on Aquaculture Nutrition, Oct. 18-15, 1975, Leusen/Rehbooth, Del., ... / Edited by Kent S. Price, Jr., William N. Shaw, Karin S.

Gardner, ... Price, Kent S  
International Conference on Aquaculture Nutrition, 1st. Lew, Es/Rehbooth, Del., 1975.

Newark, Del.: College of Marine Studies, University of Delaware, viii, 323 p. : ill. ; 23 cm. ... 1976.

77007213 157.8 R29 No: 260562

Notes: Sponsored by the Sea Grant College Program, University of Delaware in cooperation with the U.S.-Japan Aquaculture Panel. Includes bibliographies and indexes.

Search: 19760000 Doc Type: MONOGRAPH Source: OTHER US Cat Code: 2005

Descriptors: Aquaculture; Congresses.; Fishes; Feeding And Feeds; Congresses.

620959 1d No: 72-9102690

5544.3.H3H3 Id No: 72-9102690

Feasibility studies in aquaculture. Ball, J. L. Hawaii Univ Ext Misc Publ 93: 71-73. July 1972

5544.3.H3H3 Search: 19720700 Source: EXT Doc Type: ARTICLE Cat Code: 2035

620960 1d No: 72-9102691

5544.3.H3H3 Id No: 72-9102691

Nutrition problems in aquaculture. -Aquatic animals. Bardach, J. E. Hawaii Univ Ext Misc Publ 93: 74-78. July 1972

5544.3.H3H3 Search: 19720700 Source: EXT Doc Type: ARTICLE Cat Code: 2035

1192637 1d No: 76-9121050

S205.M3 Id No: 76-9121050 Experimental aquaculture of the mussel, *(Mytilus viridis L.)* as a protein source

Sivalingam, P.N.; Rajagopal, K. Malays Agric Res 4 (2): 137-139. Ref. Aug 1975

529.83 Search: 19750000 Doc Type: ARTICLE Cat Code: 2005

Descriptors: Mussels

5628951  
56443-XM3 Id No: 72-9102892  
Fund as the limit to commercial shrimp aquaculture: A challenge to the feed industry

Conover, R D  
House Univ Ext Misc Publ 93: 80-83.  
July 1972

Source: EXT Doc Type: ARTICLE  
Cat Code: 2305

1240473  
The role of the feed industry in developing formulated feeds for aquaculture

MacDonald, W Jr  
PA U S Natl Tech Inf Serv 200452: 119-123.  
1976

Source: OTHER US Doc Type: ARTICLE  
Cat Code: 2305

1282865  
Hydroponically grown forage is still with us - Grass machines.

Anim Nutr Health 32 (2): 18-19.  
Mar 1977

Source: OTHER US Doc Type: ARTICLE  
Cat Code: 2305

#### ANIMAL SCIENCE

1276747  
105-2 OR3 Id No: 77-9072050  
Produktiviteit van en produktie mogelijkheden in het aquatische milieu: Productivity of production potential in aquatic environment

Huisman, E A  
Landbouwkfd Tijdschr 80 (7): 239-242. Ref.  
July 1976

105-2 OR3  
Language: DUT  
Search: 19760700  
Doc Type: ARTICLE  
Cat Code: 2305

Alabama, Agricultural Experiment Station  
Highways Agric Res 23 (3): 10. Fall 1976  
100 ALIH  
Search: 19760610  
Doc Type: ARTICLE  
Cat Code: 2305

1228084  
5441-R26 Id No: 77-9029023  
Aquaculture: toward an ecological approach. Fish ponds on farms.

McLarney, W D  
In Radical Agriculture: R. Merrill, ed. p. 32B-339. Ref.  
1976

5441-R26  
Search: 19700000  
Source: OTHER US Doc Type: ARTICLE  
Cat Code: 2305

1280542  
SH2-15 Id No: 77-8080497  
The International Center for Aquaculture. Annual report for fiscal year 1978

Alabama, Agricultural Experiment Station: International Center for Aquaculture Auburn 115 p. Ref.  
SH2-15  
Search: 19770500  
Source: EXP STN Doc Type: MONOGRAPH  
Cat Code: 2305  
Descriptions: Alabama

1292453  
SH1-US Id No: 77-9084514  
Aquacultural economics bibliography  
Vondruska, J  
NOAA Tech Rep NMFS SSRL Mar Fisheries Serv 703,  
123 p.  
SH1-US  
Search: 19760600  
Source: OTHER US Doc Type: ARTICLE, BIB  
Cat Code: 2305

1209421  
100 ALIH Id No: 77-0011708  
Reducing uses of energy in aquaculture  
McCoy, E M; Goutwell, J L; Jolly, C M

## PLANT SCIENCE

- SH3027 Id No: 73-9392985 Book Cat: 73012265  
 Annual report  
 1st = 1970/71 -  
 International Center for Aquaculture: Alabama, Agriculture  
 Experiment Station, Auburn University 1971=  
 SH21-15  
 73012265  
 Note: Project AID/cd 2780  
 Search: EXP STN Doc Type: SERIES  
 Cat Code: 2805  
 Descriptors: Fish-culture
- SH3028 Id No: 72-9004271  
 Dispositif stérile pour cultures hydroponiques: Etude et applications pour hydroponic cultures - Roots.  
 Garcé, J. L.; Rainbault, M.; Mouraret, M.  
 Soil Biol. Int. News Bull. 14: 34-37. Ref. 1971=  
 559.85  
 Language: FRE  
 Search: 19710000  
 Doc Type: ARTICLE  
 Cat Code: 4005

## VETERINARY MEDICINE

- SH3029 Id No: 77-9071490  
 Utility of hydroponic cutting technique for chromosomes number and morphology studies in *Anthrax*. Peanuts.  
 Robinson, C. E.; Davis, K. S.  
 J. APREA (Am peanut Res Educ Assoc Inc) 7 (1): 1-3. Sept 1975  
 SH320.A4  
 Search: 19750900  
 Source: DIAHUS  
 Doc Type: ARTICLE  
 Cat Code: 4020
- SH320.A4  
 Utility of hydroponic cutting technique for chromosomes number and morphology studies in *Anthrax*. Peanuts.  
 Robinson, C. E.; Davis, K. S.  
 J. APREA (Am peanut Res Educ Assoc Inc) 7 (1): 1-3. Sept 1975  
 SH320.A4  
 Search: 19750900  
 Source: DIAHUS  
 Doc Type: ARTICLE  
 Cat Code: 4020

## FORESTRY

- SH321 Id No: 73-9225444  
 Anatomopathological features of the roots of cucumbers and tomatoes under conditions of hydroponics  
 Zelenina, N. V.  
 Nauch Dokl. Vyssh. Shk., Biol. Nauk 7: 73-77. Ref. 1973  
 442.8  
 Language: RUS  
 Search: 19730000  
 Doc Type: ARTICLE  
 Cat Code: 4020
- SH324 Id No: 75-9014719  
 Zhusenko, S. Hydroponic pestovani semenaků leinich seedlings: Experience with hydroponic growing of forest tree  
 Posolskii, J. Koutoik, V.  
 Lesnitsa 20 (7): 655-686. Ref. Eng. sum. July 1974  
 99.9 C334  
 Language: CZE  
 Search: 19740700  
 Doc Type: ARTICLE  
 Cat Code: 3515
- SH325 Id No: 73-9225444  
 Anatomopathological features of the roots of cucumbers and tomatoes under conditions of hydroponics  
 Zelenina, N. V.  
 Nauch Dokl. Vyssh. Shk., Biol. Nauk 7: 73-77. Ref. 1973  
 442.8  
 Language: RUS  
 Search: 19730000  
 Doc Type: ARTICLE  
 Cat Code: 4020

- SH327 Id No: 72-9042338  
 Sc 11 eas container system developed for growing conifer seedlings  
 White, D. P.; Schmidle, G.  
 Tree Planters Notes 23 (1): 1-4. Feb 1972  
 1-962 CST71  
 1-962 CST71  
 Search: 19720200  
 Source: USDA Doc Type: ARTICLE  
 Cat Code: 3515

1180423  
20-5 PB72. Id No: 78-9110242  
Ośrodek badania systemów korzeniowych i jeczenia. II.  
Makazniki rozmiarów systemów korzeniowych odmian gryf., lubuski  
i skrzeszewickiego w kulturach wodnych; Inheritance of  
barley-root systems. II. Indices of roots dimension of  
cultivars gryf., lubuski and skrzeszewicki grown in water  
culture. Krzywanski, Z.; Wojsik-Mojkowik, D.; Borys, M.; Stroiński, A.  
; Wojciechowski, J.  
Pr. Pozn. Tow Przyj. Nauk Roln. Lasy 41: 231-238.  
Eng. sum. 1976  
20-5 PB72  
Language: POL  
Search: 19760000  
Doc Type: ARTICLE  
Cat Code: 4025; 4035

79-389  
8126-5-15 1973 Id No: 74-9004223  
Risultati di un quadriennio di sperimentazione sul  
miglioramento genetico delle piante per la coltura idroponica  
e prospettive future. Risultati di un'esperienza di quattro anni  
sull'ammodernamento delle piante per idroponica coltura  
e sull'outlook per il futuro  
Panella, A.  
In International Congress on Soilless Culture. 3d.  
Sassari, 1973. proceedings 3d: 175-185. Eng. sum. 1973  
81126-5-15 1973  
Language: ITA  
Search: 19730000  
Doc Type: ARTICLE  
Cat Code: 4025

1213854  
QH431-A1525 Id No: 77-9016225  
Wyznaczenie hydroponiki w selekcji i jeczeniu: The use of  
hydroponics in spring barley breeding  
Buzicka, F.  
Genet. Selektentni 11 (3): 255-261. Eng. sum. June 1975  
QH431.A1525  
Language: ENG  
Search: 19750600  
Doc Type: ARTICLE  
Cat Code: 4025

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20-5 PB72 Id No: 78-9110242  
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## Descriptors: Bulgaria

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